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ABSTRACT

Program evaluation is a difficult task, but it must be attempted in order to provide the decision-makers with a basis on which to judge the effectiveness of the program and on which to recommend improvements. Realizing that difficulties may exist, such as in the unique nature of a specific program or in the lack of adequate measurements of effectiveness, it was felt that a general evaluation model should be developed. The Apex model was developed to evaluate a program in a rural, economically depressed community in North Carolina, with an integrated population of 1,900 students in four schools, Grades 1-12. The model was adapted from a previously developed model and incorporates process evaluation, product evaluation, and a feedback system. It also makes use of the post-hoc method and a control group. This model was useful in judging the effectiveness of the Apex project in relation to specific project objectives and in relation to the intent of the legislation which funded the project. It is believed that certain aspects of this model can be used in developing the needed general model of evaluation. (JS)

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AN APPROACH TO EVALUATION:

A MODEL FOR EVALUATING THE NORTH CAROLINA EXEMPLARY PROGRAM

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INTROLUCTION

The purpose of this paper is to present a description of the North Carolina exemplary program, henceforth the Apex Program, and the evaluation model and methods involved with the evaluation of this program. While this paper is primarily concerned with the Apex program evaluation, many aspects of this approach to evaluation may be generalized to other programs.

The Apex Program

The lineage of this exemplary program can be traced directly to the general thinking about career development manifested in the legislation precipitated by the high level of youth unemployment. Under Part D (Exemplary Programs and Projects) of the Vocational Education Amendments of 1968 (P.L. 90-576, Section 141), Congress defined the purpose of exemplary programs and projects: "to stimulate, through Federal financial support, new ways to create a bridge between school and earning a living for young people, who are still in school, who have left school either by graduation or dropping out, or who are in post-secondary programs of vocational preparation, and to promote cooperation between public education and manpower agencies."

The Apex program, with its three year allocation of approximately $400,000 will be funded through the Office of the Commissioner. Venn (Policy Paper AVL-V70-1, 1969) pinpointed the priorities that the Office of Education had set in light of the 1968 Amendments:

1. Provisions for broad occupational orientation at the elementary and secondary school levels so as to increase student awareness of the range of options open to them in the world of work.

2. Provision for work experience, cooperative education and similar programs, making possible a wide variety of offerings in many occupational areas.

3. Provisions for students not previously enrolled in vocational programs to receive specific training in job entry skills just prior to the time that they leave the school. (Some of these training programs might be very intensive and of short duration.)

4. Provision for intensive occupational guidance and counseling during the last years of school and for initial placement of all students at the completion of their schooling. (Placement might be in a job or in postsecondary occupational training. Placement should be accomplished in cooperation with appropriate employment services, manpower agencies, etc.)

5. Provisions for the grantee or contractor to carry the program on with support from regular funding sources after the termination of the Federal assistance under Part D of P.L. 90-576. (Federal assistance under Part D cannot exceed three years.) (Policy Paper AVL V70-1, 1969).

This policy statement, together with Section 141 (Vocational Education Amendments of 1968, Part D), guided our efforts in developing the exemplary program.

During the summer of 1969, the Apex community of Wake County, North Carolina, was selected as the site for exploratory work in the development of a middle grades program by the Center for Occupational Education at North Carolina State University. This project stimulated the interest of school personnel in implementing a total comprehensive program in occupational education. The interest displayed by school personnel in this area was one of the major factors contributing to the

selection of the Apex attendance area as the locale for the present project. A number of other factors also were considered during the selection process. Apex is the most rural community in Wake County. The economic focus of this community is undergoing a rapid transition from a predominately agrarian economy toward increased industrialization. Although Apex is located 20 miles from Raleigh, the character of the population in the community and problems of providing adequate occupational education more closely resemble the typical rural communities of North Carolina, and, indeed, of the South, than the larger urban areas. The transition period has required a re-examination of the needs for occupational education. The community itself cannot absorb the products of the school in its immediate labor force. The socio-economic level of the community is relatively low. The per-capita income is below the average for Wake County and for North Carolina. The Apex attendance area received the largest amount of Title I ESEA funds of any school system in the county. Approximately 55 percent of the students in the Apex area qualified under Title I support, the highest percentage of any Wake County attendance area. Obviously, the project focuses on an area that is economically depressed.

There is an equal distribution of whites and blacks in the Apex attendance area. The proportion of black youths in the attendance area, 50 percent, is the highest for any attendance area in Wake County, and is higher than the proportion of the black population in North Carolina. According to Mann (1963) the black population is increasing proportionally in the target attendance area. The integration

plan has been completed for the Apex attendance area. The student body in each of the schools will be approximately equally divided between black and white students. The school dropout rate is now approximately 40 percent, and the academic achievement level in the Apex attendance area is the lowest of any of the Wake County attendance areas.

The Apex attendance area includes four schools:

1. The Holly Springs Elementary School, which includes grades 1-5, with an enrollment of 250 students.

2. The A. V. Baucum Elementary School, which includes grades 1-3, with an enrollment of 250 students.

3. The Apex Elementary and Junior High School, which includes grades 4-8, with an enrollment of 800 students.

4. The Apex High School, which includes grades 9-12, with an enrollment of 600 students.

The central participants in the project, therefore, are the 1900 students in the four Apex schools and the 75 administrators and teachers who operate the program as well as the parents and other members of the community. Since there are no private schools in the Apex attendance area, the project will impact upon all youth in the area in grades 1-12.

Evaluation Specifications

At the time of formal acceptance of the Apex program, word was received that budgetary provisions should be made for an evaluation plan to be carried out by a third party. In the case of the Apex program, the Center for Occupational Education is the third party which has been selected to perform the evaluation (we also are to evaluate

Georgia's exemplary program). The requirements of the evaluation plan are:

> An evaluation plan will be carried out by a third party for evaluating the effectiveness of the program. The plan shall describe the steps by which the contractor will:
> A. Determine the extent to which the objectives of the program have been accomplished,
> B. Determine what factors either enabled or precluded the accomplishment of these objectives, and
> C. Promote the inclusion of the successful aspects of the program into vocational education programs supported with funds other than those provided under the contract. (Department of Health, Education and Welfare, Office of Education, Contracts and Grants Division, 1970).

In the remainder of the paper the evaluation plan will be described and the rationale for selecting this particular plan will be discussed. One of our purposes in the presentation of this paper is that recently many exemplary programs have been funded and more will be funded in the near future. Presumably, all of these programs will require evaluation by outside agencies. Although the evaluation system that will be presented was developed specifically for the Apex program, certain aspects of the evaluation plan appear to be sufficiently generalizable to apply to many other exemplary programs. It is hoped that this paper may serve as a stepping stone to the development of a general model of evaluation which may be applied in all exemplary programs. The utility of such a model is apparent since it would allow the evaluation results of the various programs to be compared, thereby greatly reducing the complexity of identifying the factors that contribute to a successful program, and strengthen the arguments for continuation and expansion of the successful aspects of each program.

Evaluation of the Project

The outcomes of establishing this system of evaluation for the project are threefold. First, evaluation at the process level allows one to monitor the system and its component parts in order to determine if process objectives are being carried out by project personnel and to identify departures from specified procedures. Second, evaluation at the product level enables the examination of the results of the project activities in terms of the physical entities produced and the behavioral changes produced. Finally, evaluation results at the product and process level provide the feedback information upon which decision-makers can base their system updating decisions and, given a set of objectives that are fixed for a given time period, the set of requirements provided by the U. S. Office of Education can be met. A model of such an evaluation system has been developed by Coster and Morgan (1969, 1970) and with slight modification can be applied to the evaluation of this project. The following section will delineate the evaluation model and later the evaluation procedures will be described.

The Model

From the twin sources of the individual attributes and the needs of society, the mission of vocational education is specified by legislation, (Vocational Education Amendments of 1968), albeit somewhat by inference. U. S. Office of Education policy papers have produced more specific goals for particular programs (Venn, 1969). These must be translated into more specific objectives. The specificity and nature

of the objectives differ with the level of operation and it is desirable to examine a wide range of objectives in order to develop those objectives which are most congruent with the goals of this legislation and policy. Once the objectives are specified, the operational procedures and resources required to attain the objectives may then be determined. The operational procedures and resources constitute the technology of education; the combination of human resources, hardware, and software which are needed in an appropriate mix to ensure the attainment of the objectives. Included also in the technology is the know-how by which these resources are mixed and applied. The methodology, the emphases, the curriculum, and the materials all form part of the technology of the educational process. Finally, of concern to project evaluation are the actual outputs, or products, of the program. The evaluation model to be employed consists of five principal structural components:

(1) The goals of the program, which are a manifestation of the combined mix of the value, structure of society and the attributes of the individual are manifested in legislative intent modified or adopted in accordance with the State plans and local policies.

(2) The objectives of the program (desired products).

(3) The process objectives (desired processes).

(4) The observed process:

(a) The operational procedures--i.e., the methods, techniques, emphases, and efforts--being utilized to attain the objectives.

(b) The resources--both materials (including facilities, equipment, and materials) and human (including teaching, administrative, supervisory, service and special staff)--provided to facilitate the attainment of the objectives.

(5) The actual outputs or products of the program, as defined in terms stated in the product objectives of the project.

The static interrelationship of these components is illustrated in Figure 1.

Evaluation may be directed toward an appraisal of the processes of a project; that is, to an appraisal of the operational procedures and the resources available to operate the program and to attain the objectives. Evaluation may be directed toward an assessment of the actual outputs or products of the program. Traditionally, the major emphasis on evaluation has been on the process evaluation regarding such entities as the training and experience of teachers, the hardware and software available for the instructional program, the ratio of guidance counselors to student enrollment, and the size of classrooms and shops while the product of educational programs is oftentimes overlooked.

The assessment of the product of vocational education is more difficult to perform. Yet the crux of the evaluation problem is the congruence between the actual outputs of the program and the product objectives of the program. A prime concern of the decision maker is the extent to which these two entities are in juxtaposition. The prime function of an evaluation program is to produce the information necessary to determine the extent to which these two entities are in accord.

In order for evaluation to be effective, it should be defined in terms of information needs of decision makers. Decision makers, therefore, were introduced into the model. The complete model is shown in Figure 2. The decision makers have been introduced at two points. First, the decision maker (the superintendent) has been introduced between the goals and objectives in this model to denote an administrative function. Essentially

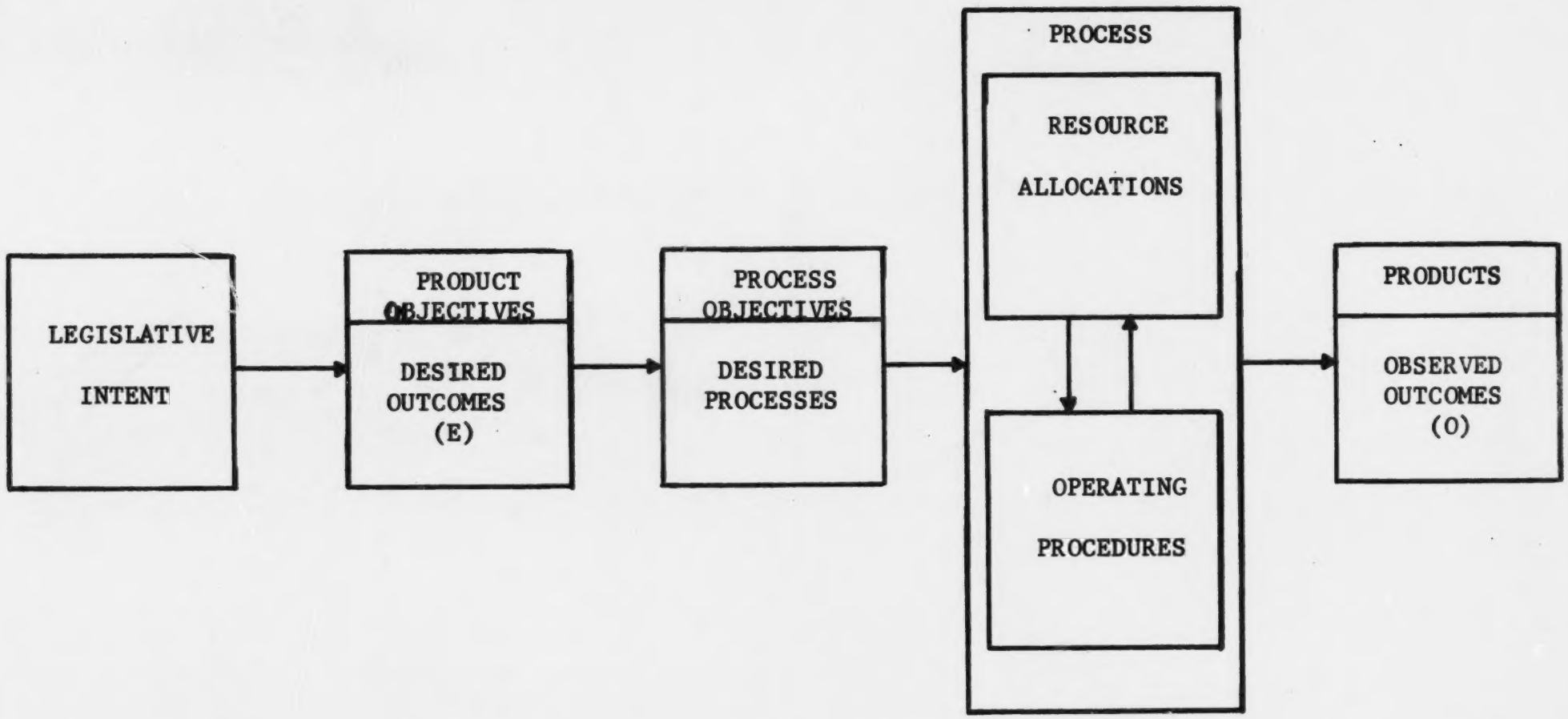

FIGURE 1

THE STRUCTURAL COMPONENTS OF THE EVALUATION MODEL

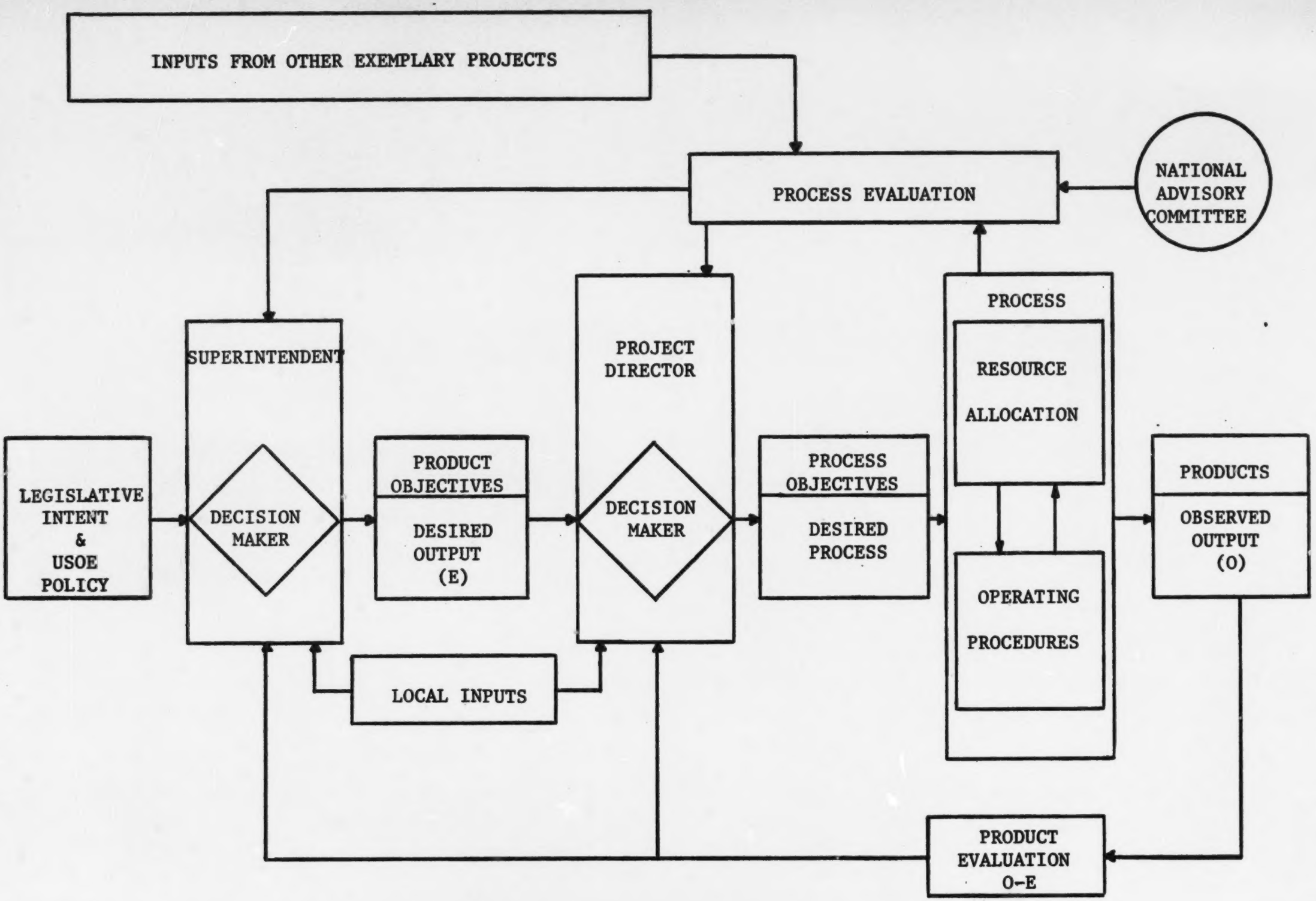

FIGURE 2
THE APEX EVALUATION MODEL

this illustrates that the decision maker is responsible for specifying those objectives congruent with the mission, and harmonious with the goals set forth by the legally constituted bodies. Second, the project director has been introduced at a point between the objectives and the process, or operational procedures and resources, to denote his implementative function. The function of the project director is to design and facilitate the implementation of the strategies for the attainment of the objectives of this project.

Thus both decision makers performing administrative and implementative functions will be provided with information on both the products, and processes of the project. This information will be expressed in terms of the degree of attainment of stated objectives. In addition, the evaluative function will act as a filter for information obtained about other on-going programs that have similar purposes. Other information needs may be fulfilled through local inputs within the community, and as needed, evaluators may be used to aid in the assessment of the information.

Evaluation Procedures

The evaluation will proceed at three levels: (1) the process level, (2) the qualitative product level, and (3) the quantitative product level. It should be noted that each level of evaluation corresponds to a level of the objectives.

At the process level, evaluation is strikingly similar to a process in test construction called "content validity." That is, do experts in the area of interest view the project activities as being adequate for achieving the stated process objectives. The evaluation function at the process level

then is to provide experts with complete and accurate descriptions of project activities that are related to respective process objectives, and to catalogue the judgement of the experts as well as their proposed alternatives. The results of this phase of evaluation will be reported fully to the Superintendent, and to the project director and his staff. Condensed versions of the process evaluations and corresponding product evaluations will be published annually as Center for Occupational Education Monographs. The final evaluation report will be incorporated into the project final report and will also be published by the Center for Occupational Education in full. Inputs from other exemplary programs will be assessed as needed, and reported to the project personnel and Superintendent.

The product evaluation will consist of comparing the expected results, as stated in the product objectives with observed results. The reporting procedures will follow the format described above. The remainder of this section will describe how each objective will be assessed, and for the sake of brevity, objective numbers that are listed in the product objectives subsection will be used instead of quoting the objective.

The Objectives

The objectives of the project include both process objectives, which refer to programmatic changes and product objectives, which refer to change in behaviors of the personnel in the total school system.

Process Objectives

The overall process objective of the exemplary program is to implement and demonstrate the feasibility of a comprehensive occupational education program in a rural school system which will provide for:

1. The intensification of the counseling-placement function in the school system to provide specifically for:

   a. The provision of "realistic information"* about the occupational environment to each student at a level of complexity commensurate with his maturity.

   b. The provision of "realistic information" to each student regarding his capabilities and probabilities for success (in given occupations).

   c. The provision of practice in decision making to each student with emphasis on increasing the student's proficiency in making "rational" decisions.

   d. The intensification of individual counseling for students immediately prior to leaving school.

   e. The provision of placement services to insure that each student who leaves school will be placed in an entry occupation or in further schooling, and to insure an essential continuity between school and community.

2. The introducation of a program in elementary schools designed to provide specifically for:

   a. The integration of occupational information with basic educational skills and the intensification of exposure to the range of occupations within the context of the level of maturity of the student.

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*Realistic information" refers to the best assessment at the present time, including projections on wage earnings, longevity, and working conditions. Of course, there is a possibility that this information may not be accurate due to the time lags that exist between the gathering and publication of data, and invalidity of our measuring instruments. If our instruments were perfect and our projections completely accurate and rational decisions always desired, it would not be necessary to burden the student with more than a set of optimal occupations for his consideration. However, since this is not the case, each individual should be provided with as many alternatives as is possible in order to maximize his probability of occupational proficiency.

b. The development of work habits and realistic attitudes toward occupations and work.

3. The introduction of a program in the junior high school designed to provide specifically for;

a. The integration of occupational education with the academic curricula at the middle grade level.

b. Realistic exposure to the range of occupations in the community, state, and nation, including up-to-date information as to knowledge, skill and training requirements and benefits to be accrued from training.

c. Realistic exposure to the knowledge of one's self, including the beginning elements of understanding the attribute mix of the student.

d. The introduction of the career decision-making process, including the choice and consequence of alternatives.

e. The provision of "hands-on" experience in occupational laboratories, and on-site observation of work.

f. The provision of appropriate skill training for students who have decided to leave school prior to completing junior high school as a "vestibule function."

4. The expansion of the occupational education programs in the high school program to provide specifically for:

a. The integration of occupational education with the academic program at the secondary level.

b. The equipping of each secondary school student who does not plan to continue formal schooling with a job entry skill.

c. The intensification of the counseling-placement function to insure that each student is prepared to obtain employment in an occupation.

d. The expansion of opportunities for cooperative education and work study programs.

e. The provisions for appropriate skill training for students who have decided to leave school prior to graduation as a "vestibule function."

The process objectives will be evaluated by expert judgement. The processes will be recorded in accordance with these objectives in order that other interested parties may evaluate the attainment of the objectives These objectives will become more specific as project personnel are employed and the program is established.

Product Objectives

The product objectives include qualitative and quantitative manifestations of behavior which are expected to change as a result of the proposed project.

Qualitative Objectives

1. To increase the student's interest in and awareness of occupations in his community.

2. To increase the student's interest in academic subject matter areas by incorporating occupational information into the curriculum.

3. To increase the interest of parents, teachers, and students in occupations .

4. To increase interest in employee abilities and attitudes by students, teachers, and parents.

5. To increase satisfaction with curricular offerings.

6. To increase interest in postsecondary training.

7. To increase interest in occupational course offerings at the high school level.

8. To increase interest in obtaining entry level skills.

9. To increase the student's knowledge of the occupational environment and his own abilities.

10. To increase the number of "rational" occupational decisions.

Quantitative Objectives

1. To increase the number of occupations that a student can name by 50 percent each year.

2. To have each student know the occupations of each of the members of his immediate family (mother, father, brothers and sisters).

3. To increase the number of "good" work habits that each student knows by 50 percent each year.

4. To increase average academic achievement by 5 centiles each year, as measured by the California Achievement Test.

5. To increase the average daily attendance percentage by 5 percent each year.

6. To reduce the number of grade failures by 5 percent per year without altering academic standards.

7. To increase the number of parental conferences requested by 5 percent per year.

8. To decrease the dropout rate by 5 percent per year.

9. To increase the number of students in work experience programs by 10 percent per year.

10. To increase the number of requests for career guidance services by 20 percent the first year and 10 percent each of the following years.

11. To increase to 100 percent in three years, the percentage of persons with job entry skills, who do not plan to enter a postsecondary school.

12. To increase the number of students using the occupational information center to 80 percent of the students enrolled within three years.

13. To place all (100 percent) of graduates and dropouts that seek employment within three years.

14. To increase the proportion of students in the high school enrolled in vocational programs by 5 percent per year.

15. To increase the number of course offerings in vocational areas by two courses per year.

16. To increase the number of students applying for postsecondary education by 5 percent per year.

The evaluation system will be employed to monitor and update the system objectives and program performance. Since the evaluation is dynamic, the objectives can only be viewed as fixed, prior to the first evaluation, which will be based on the performance of the Apex project and other exemplary programs, as well as new research findings.

Qualitative objectives 1, 2, 3, 4, 5, 6, 7, and 8 will be assessed by developing questionnaires based psychometrically on Likert scalling techniques. The increases in the various qualities will be evaluated by a pretest--posttest paradigm, as will all other product objectives. Baseline measures will serve as the starting point against which measures obtained at a later time will be compared.

These questionnaires will be designed for persons in various age groups that are appropriate for the assessment of given objectives. Consultants will be employed to aid in the development of these questionnaires as well as for other aspects of the product evaluation.

Qualitative objective 9 will entail drawing upon items from tests that have previously been developed to measure occupational knowledge, and design a test appropriate for each age group. The knowledge of individual abilities will be assessed by comparing self ratings with best results and ratings by other persons. The increase in knowledge would correspond to a greater degree of agreement between the self rating and the criterion measures.

The assessment of "rational decisions" (qualitative product objective 10) will be limited to grades 7 through 12. The correspondence between stated occupation choice, and the probability of success in the chosen occupations, will be assessed by staff members. If the probability of success is rated below .5, the occupational choice will be considered "irrational decision."

The quantitative product objectives, like the qualitative product objectives, will use baseline measures obtained at the onset of the program as a relative zero point. Quantitative objectives 1, 2, 3, 4, 5, 6, and 7 will be assessed for grades 1-12, objectives 8, 9, 10, 11, 12, and 13 for grades 6-12; and objectives 14, 15, and 16 for grades 9-12.

Objective 1 will be assessed by simply having each student list all of the occupations that he knows and if for example he listed 10 occupations on the pretest, a 50 percent increase would require that he be able to list 15 occupations at the beginning of the second year, 20 at the beginning of the third year and 25 at the end of the project.

Objective 2 will be assessed by a listing of occupations of the immediate family. The list will be compared with school records.

Ojbective 3, like objective one, will be assessed by simply listing "good" work habits. The goodness of the work habits that are listed will be evaluated by staff members. A simple frequency count of the "good" habits will be compared with the baseline measure to ascertain percentage increase.

Objective 4 will be assessed by using population norm deviations to obtain centiles at the baseline. These norms will also be used to ascertain the centiles from which the baseline measures will be subtracted.

The average daily attendance at the high school level is approximately 83 percent. To fulfill objective 5 the attendance percentage must rise to approximately 95 percent.

Without a change in grade policies, the number of grade failures must be reduced by 15 percent of the original number, to fulfill objective 6. A baseline measure will be used.

The number of parental requests for consultation about their child's career plan must be increased by 5 percent per year in order to fulfill objective 7.

The dropout rate in Apex High and Apex Consolidated is approximately 40 percent. To fulfill objective 8 at the end of the program it must be 25 percent or less.

The fulfillment of objective 9 is contingent upon increases in the proportion of students in school supported work experience by 15 percent, compared to baseline measures.

The fulfillment of objective 10 is based on increasing requests for "career guidance services," as defined by focus of the request, by

focus of the request, by 20 per cent over the baseline measure for the first year and 20 percent the next two years.

The fulfillment of objective 11 requires that each person that graduates from Apex High School who is not planning to continue education will be equipped with entry level job skills.

Objective 12 requires that 80 per cent of the students in the middle grades must "use" the Occupational Resources Center. Use is defined as spending at least one hour per semester at the Center.

The fulfillment of objective 13 is contingent upon placing each student who requests placement in a position within a twenty-five mile radius of Apex, North Carolina.

The percentage of students enrolled in vocational programs is approximately 25 per cent. To fulfill objective 14, the percentage enrolled must increase to 40 per cent. Vocational programs are defined for evaluation purposes as courses that provide the student with job entry skills.

Objective 15 is fulfilled by adding two courses per year to the vocational program curriculum for the three year period.

To fulfill objective 16 it is necessary to increase the proportion of students applying for postsecondary education by 5 per cent per year. Post-secondary education means at least one year of education after the completion of high school.

As was stated before the project process and product objectives will be reviewed by the decision-makers constantly. Revisions of the objectives are, of course, subject to U.S. Office of Education approval. The changes in the objectives may occur on a semi-annual basis the first two years and an annual basis thereafter.

The plan for evaluation in Apex is not based on a random selection of students since Apex is an intact sample. Each child will be included in the evaluation. A control group composed of randomly selected students from schools identified by state personnel as being most advanced in vocational education practices and most similar to Apex will be selected. These students will only be assessed once at the end of the third year of the Apex program. This method is called a post hoc design.

Before one attempts to develop an evaluation plan, the question of why is the evaluation being undertaken must necessarily be answered. One answer to this question for the Apex program is assumed to be: evaluation is undertaken in order that the decision-maker may be provided with information that can be used to improve his program. This function corresponds to what Scriven (1967) calls "formative evaluation". Formative evaluation is a developmental form of evaluation in which the evaluator's responsibility is providing information upon which judgements about program revisions can be based. Another assumed answer in the Apex program is: evaluation is undertaken, in order to determine if a program as a whole, is effective. This corresponds to Schiven's definition for summative evaluation. Summative evaluation seems to be the type of evaluation described in the U. S. Office of Education specifications.

Continuing on this line of reasoning, certain other assumptions have been made. The first assumption is that at best, the Apex program is sophisticated guesswork. That is , many aspects of existing research and development projects have been combined, into a single program. Since the Apex program is unique, one cannot say what effect the interaction of the selected factors will have on the program. The second

assumption is that even if the Apex proposal were essentially perfect, a certain amount of "slippage" would occur because communication systems among humans are somewhat less than perfect. Hence,formative evaluation will be undertaken, and the program will be revised, or at least reviewed, semi-annually for the first two years of operation.

It is also assumed that the Apex program must justify its effectiveness to the funding agency specifically and to the public in general. This primarily involves the identification of products that the program has produced, as differentiated from those that might be produced without the program. Hence, baseline data and a comparison (control) group is necessary. However, the comparison group we have selected would be expensive indeed to follow throughout the course of the project, therefore we must accept the weaknesses of a post hoc design, with no pretest on the control. The differences in the two groups will be assumed to be attributable to the program. The summative evaluation is limited to the third year of the program and objectives will be fixed during this time period. The efficiency of the program cannot be determined except by comparison with similar program or indirectly by expert opinion. Almost every evaluation plan if not every plan, has been damned and praised by various sources and for various reasons. We expect little better for our plan. For example, Guba (1969) virtually annihilated all current models of summative evaluation. This was followed by Light and Smith (1970) who credited current evaluation methods with possessing far greated power in detecting failure than inspiring success. Stufflebeam (1970) attacked summative evaluation on

similar grounds. Perhaps the most damning of all criticism of summative evaluation was produced by Wolf (1969) with his tongue-in-cheek "colloquial method".

> Social psychological research has demonstrated that decisions arrived at by a group will achieve greater acceptance than decisions arrived at by a individual. This finding is the basis of the colloquial method. In applying this method, one need merely assemble a group of people who have been associated with a particular program to discuss its effectiveness. After a brief discussion, the group will usually conclude that the program has been indeed successful. This conclusion can then be transmitted to funding agencies and other school personnel. It is unlikely that such evaluations will be challenged since they have been arrived at by a group.

Formative evaluation, on the other hand, has received relatively little criticism. This may be due to the fact that the evaluator serves in an information-gathering capacity and does little in the way of threatening the existence of the program. The main question raised is: Is this really evaluation?

The Apex Plan combines both types of evaluation and might be criticized on the basis that the decision-maker and evaluator lead symbiotic existences for such a long period of time as to preclude objective summative evaluation, yet, realizing this weakness we contend that if the evaluator and decision-makers consciously attempt to avoid this problem, and since both wish to have the program evaluated objectively; the problem will not effect the evaluations objectivity. On the contrary, it is contended that through this method the evaluator will be intimately familiar with the program, and therefore be in a better position to evaluate it objectively.

Finally, note should be taken that resources were targeted in such a manner that each child would be assessed rather than a random

sample, thereby precluding a pretest-posttest design. The reasoning that went into this decision was that if the program was to have maximum effect all students' individual needs must be met. Project personnel, in order to meet these needs, must have relevant data on each child, rather than the mean of some theoretical population.

In closing, let me enter a plea that a general model of evaluation needs to be developed if we are to approach maximizing the benefits of the exemplary programs. For only by direct comparison of elements that are common to exemplary programs can the efficiency, and the relative effectiveness of the exemplary programs be convincingly conveyed to the public. We hope that the model which has been presented here might at least serve as a starting point for the development of such a general evaluation model.

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